

11-347419US

AMENDMENT WITH RCE

01750024aa

Amendment dated 07/26/2004

Supplement to response submitted 07/02/2004

REMARKS

Claims 1-20 are currently pending in the application. By this amendment, claims 1, 9, 13 and 20 are amended for the Examiner's consideration. The foregoing separate sheets marked as "Listing of Claims" shows all the claims in the application, with an indication of the current status of each.

The Examiner has rejected claims 1-20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,999,637 to Toyoda et al. ("Toyoda") in view of U.S. Patent No. 5,828,773 to Setlak et al. ("Setlak"). Toyoda provides a system for identifying an individual (e.g. in order to manage entrance and exit of persons in and out of restricted areas) by comparing certain characteristics of the individual with previously recorded characteristics of that individual. Match or mismatch is judged by comparing a correlation of the two sets of characteristics with a certain threshold value. One embodiment of the described invention uses fingerprints. In recording a fingerprint for purposes of later correlation, Toyoda describes in Fig. 2 and at col. 7, lines 3-23 a process wherein, after a person presses a finger onto an input surface recorded by a CCD camera, a computer judges the quality of the recorded image and displays an evaluation (e.g. "the inputted fingerprint is too thin") if the quality of the fingerprint is insufficient, and the person again tries to input a fingerprint according to the instructions. When a satisfactory image is obtained, the characteristics of the fingerprint are correlated with fingerprints of others, and if the correlation is too high the finger is judged inappropriate and a suitable instruction (e.g. "use another finger") is displayed and the person retries to input the fingerprint of another finger, as described at col. 9, lines 22-29.

In the specification of the present invention there is described prior art wherein the input apparatus issues an alarm or displays an instruction to re-execute the fingerprint reading when the image quality is inadequate. However, "the conventional fingerprint input apparatus does not notify the user of the cause of an

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occurrence of a fingerprint reading failure” (page 2, lines 16-18). The user must re-execute the fingerprint reading by trial and error, without guidance enabling correction of the cause of the failure.

In Toyoda a so-called “instruction” is provided and the user repeats the fingerprint in accordance with the instruction. All that is disclosed in Toyoda is provided at col 7, lines 3-23. After discussing issues of density, brightness and size, Toyoda makes the following statement:

When the CPU 8 determines that the quality of the fingerprint is insufficient, the CPU 8 controls in S205 the display portion 6 to show corresponding instruction comments. For example, the display portion shows that “the inputted fingerprint is too thin,” “the inputted fingerprint is too small,” and “the inputted fingerprint is incorrectly positioned.” The specific person then again tries to input his/her fingerprint according to the instructions.

The “instruction” according to Toyoda cites a cause, but fails to indicate what is to be done, leaving the determination of what is to be done to the person taking the fingerprint. In contrast to Toyoda, the present invention performs an analysis that creates an evaluation result that indicates what is to be done, so that the user does not have to interpret an instruction. For example, the evaluation result may indicate the need for an increase or decrease in the moisture applied to a finger, or an increase or decrease in the pressure applied to the finger (page 9, lines 9-18); or a change in the position at which the finger is pressed (page 10, lines 18-20) so that a spiral shape is positioned at the center of a fingerprint image (page 10, lines 4-6). Thus, the evaluation result is more helpful than the instruction provided by Toyoda.

Furthermore, the present invention provides an approach to fingerprint analysis altogether different from the analysis suggested by Toyoda. The fingerprint analyzer analyzes, as a first indication of quality, the area of a fingerprint and the continuity of the ridges (page 11, lines 21-25). Then, as a second indication of quality, feature points of the fingerprint image are extracted (page 13, lines 4-6). In both of these indications of quality, there may be defects requiring corresponding

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guidance to the user. It is to be noted that neither Toyoda nor Setlack disclose this structure of analysis or its elements. Consequently, independent claims 1 and 20 have been amended to clarify these foregoing aspects of the invention. Furthermore, some clarifying amendments have been made to claims 9 and 13. It is now believed therefore that claims 1 and 20, as well as claims 2-19 dependent from claim 1, are in allowable form.

Regarding the combination of Toyoda and Setlack, as argued by the Examiner to establish obviousness of a plurality of ways of displaying the evaluation results, Setlak provides essentially real-time feedback during the input of a fingerprint (col. 13, lines 44-46), without separate steps for evaluation following completion of fingerprint input, as contemplated by the present invention and the Toyoda reference. The real-time context for correcting a fingerprint during input provides an incentive for identifying and using a variety of feedback techniques, in order to assure suitable attentiveness to a user in a real-time context. These pressures are not present in the situation addressed by the present invention, where a recorded image is analyzed and the repetition of the fingerprint input is a discrete step undertaken after the analysis step is completed. Therefore it would not be obvious to apply a plurality of feedback techniques evident in Setlak's real-time context to a different context lacking the real-time incentives. This lack of obviousness is supported by omission in Toyoda of a plurality of feedback mechanisms, notwithstanding one of the uses of the Toyoda invention was to manage entrance and exit out of restricted areas. Therefore it is probable that the teaching of Setlak regarding use of a plurality of feedback techniques in a real-time context would not be applied to the discrete sequential step context of the present invention absent impermissible hindsight.

The Examiner has argued that Setlack and Toyoda may be combined because both show an annunciation means, and because one skilled in the art would know to use many different kinds of annunciation means. The reference to use of "many different kinds of annunciation means" merely shows an awareness that more than

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one way is available. However, it does not show that in the situation described in Toyoda and the present invention, in contrast to the real-time environment of Setlack, there would be a motivation to use more than one means.

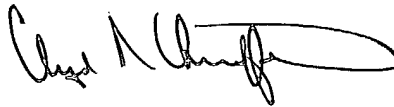
In any event, however, neither Toyoda nor the combination of Toyoda and Setlack show the analysis undertaken by the invention and now made clear in the claims.

In view of the foregoing, it is requested that the application be reconsidered, that claims 1-20 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at 703-787-9400 (fax: 703-787-7557; email: clyde@wcc-ip.com) to discuss any other changes deemed necessary in a telephonic or personal interview.

If an extension of time is required for this response to be considered as being timely filed, a conditional petition is hereby made for such extension of time. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,



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